

## **Abstract**

An optical MEMS retro-reflective apparatus with modulation capability having a retro-reflecting structure including a pair of reflective surfaces; and a MEMS device for moving at least one of the reflective surfaces of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective surfaces a distance which causes the pair of reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation. A substrate and a moveable grating structure may be substituted for the reflective surfaces.